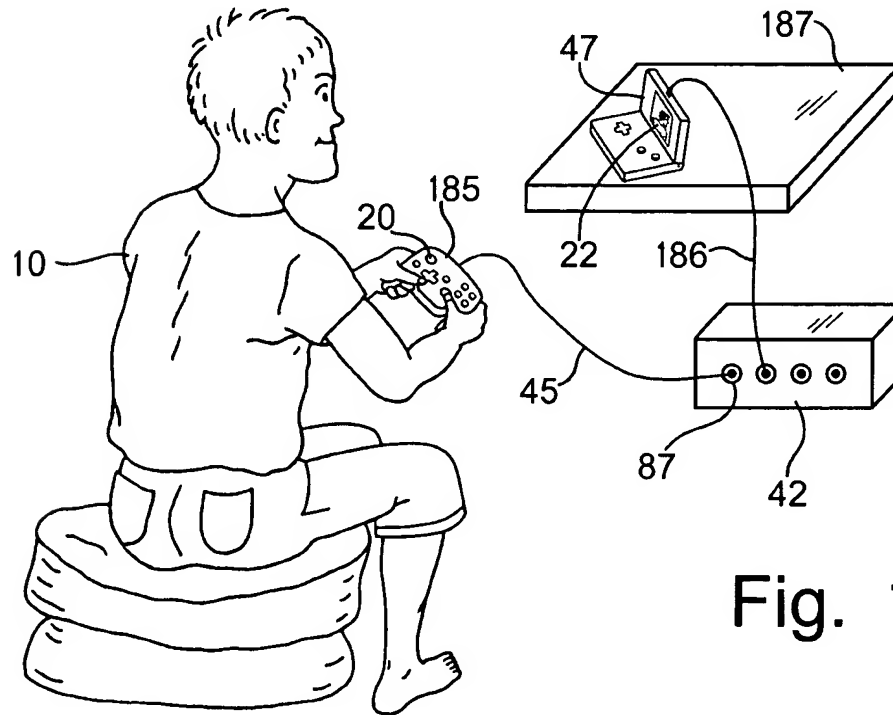Fig. 1
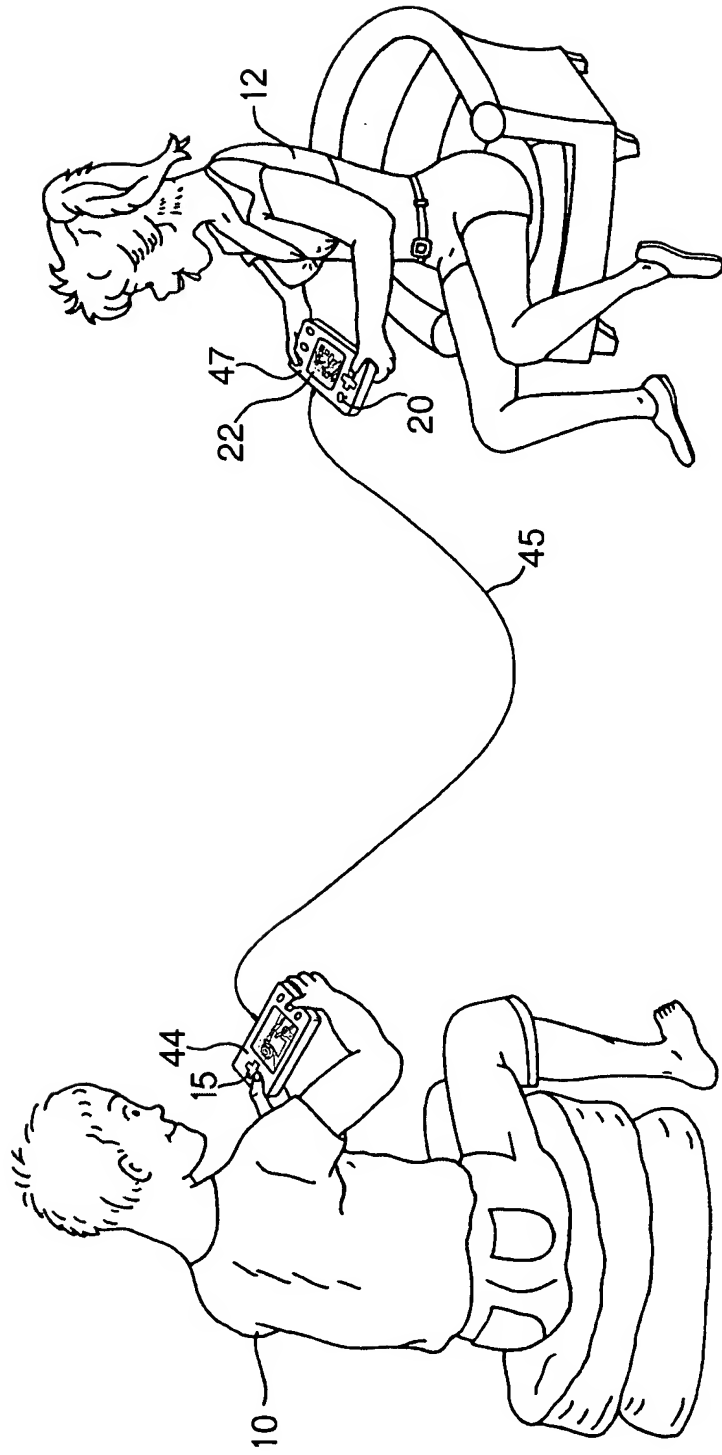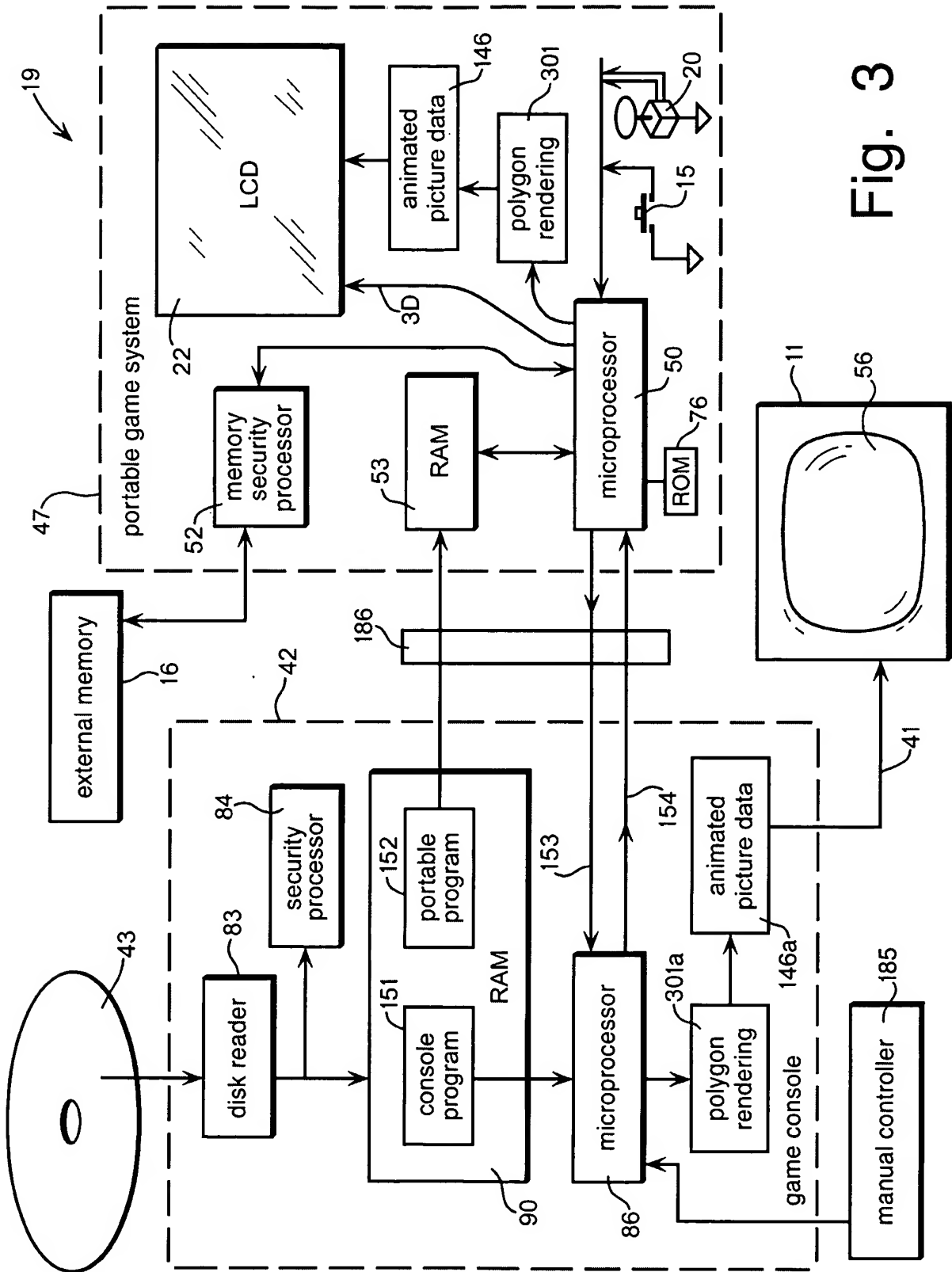

Fig. 1a

Fig. 2

Fig. 3

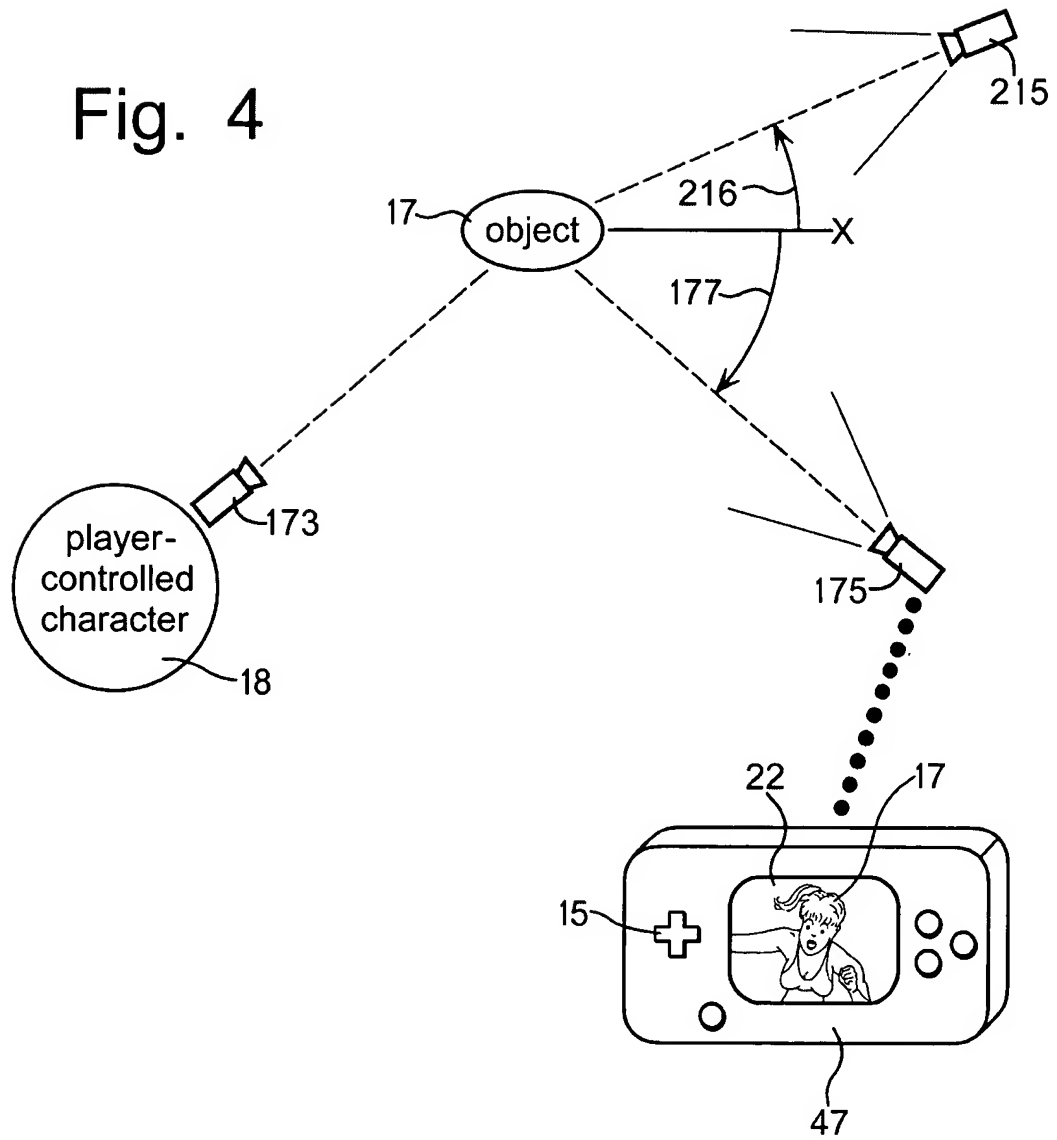Fig. 4

17 object

216

X

177

215

player-
controlled
character

173

175

18

22 17

15

47

Fig. 5

```
┌──────────┐        ┌─────────────────────────────┐
│  data    │        │           RAM               │
│  from    │───────▶│  data representing 3-D      │───53
│  other   │        │  simulated game world       │
│  system  │        │                             │
└──────────┘        └─────────────────────────────┘
     │
     78

        ┌─────────────────┐      ┌─────────────────┐
        │ generate picture│      │ generate picture│
    68──│   data from     │      │   data from     │──69
        │  viewpoint 175  │      │  viewpoint 215  │
        └─────────────────┘      └─────────────────┘

   ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─┐
                         display RAM
   │                                                 │
        ┌─────────────────┐      ┌─────────────────┐
   │    │    left eye     │      │    right eye    │ │
        │   even column   │      │   odd column    │──302
   │    │   pixel data    │      │   pixel data    │ │
        └─────────────────┘      └─────────────────┘
   │        74                       75              │

   │          ┌─────────────────────────┐           │
              │      interlaced         │
   │          │     stereoscopic        │──338       │
              │      pixel data         │
   │          └─────────────────────────┘           │
   └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─┘

                              ┌──────────┐
                              │   LCD    │──119
                              │  driver  │
                              └──────────┘

                   ┌──────────┐   ┌─────────────────────┐
                   │   LCD    │   │                     │
                   │  driver  │   │  backlit LCD with   │
                   └──────────┘   │  parallax barrier   │
                      119         │                     │──337
                            22    └─────────────────────┘
```

Fig. 6

Fig. 7

Fig. 7a
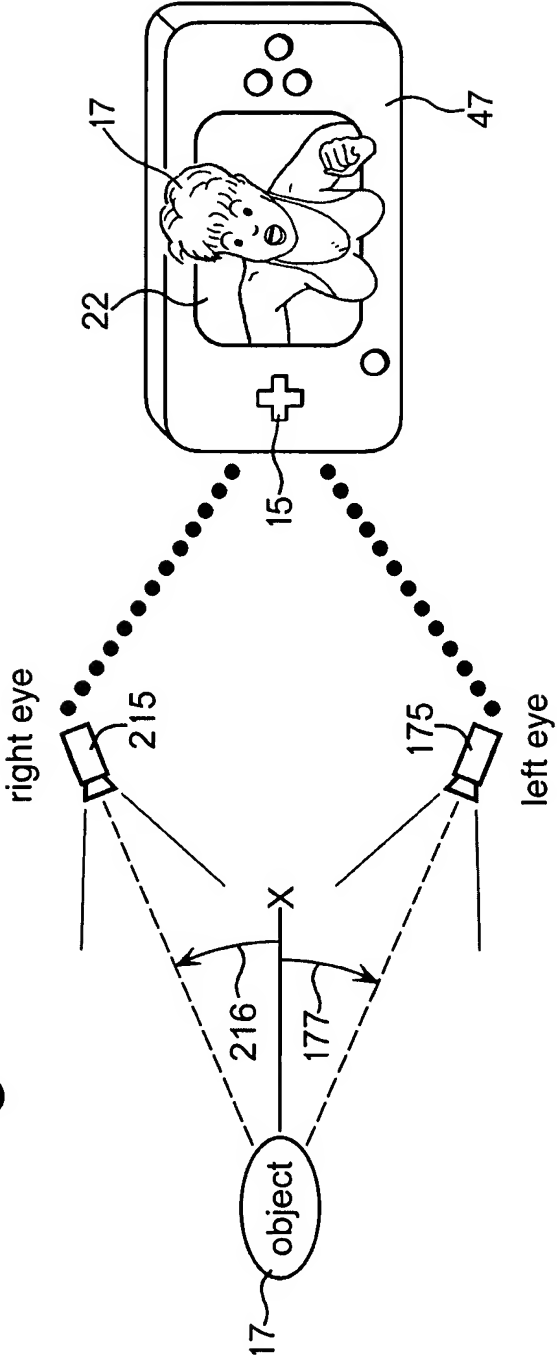
Fig. 8
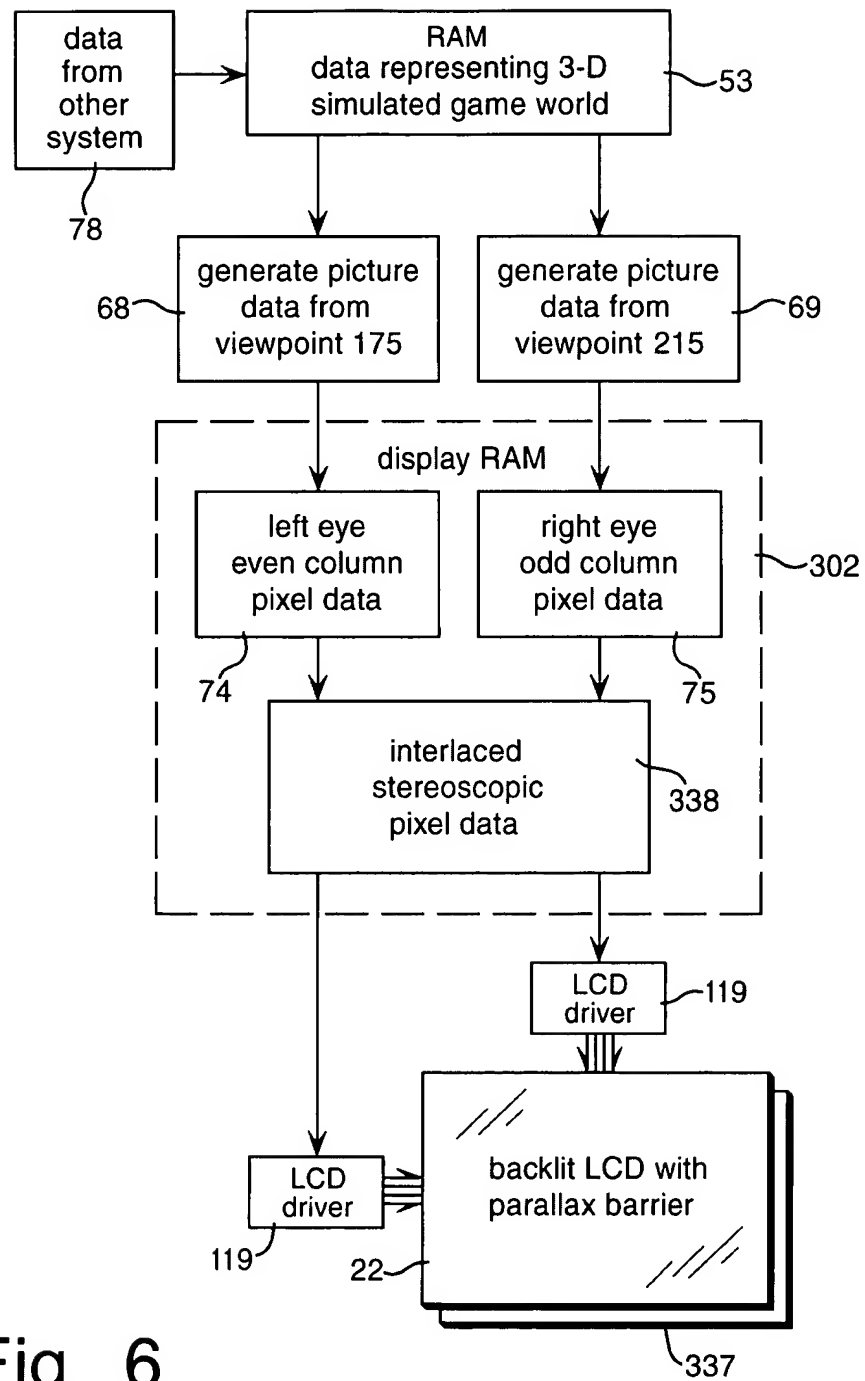
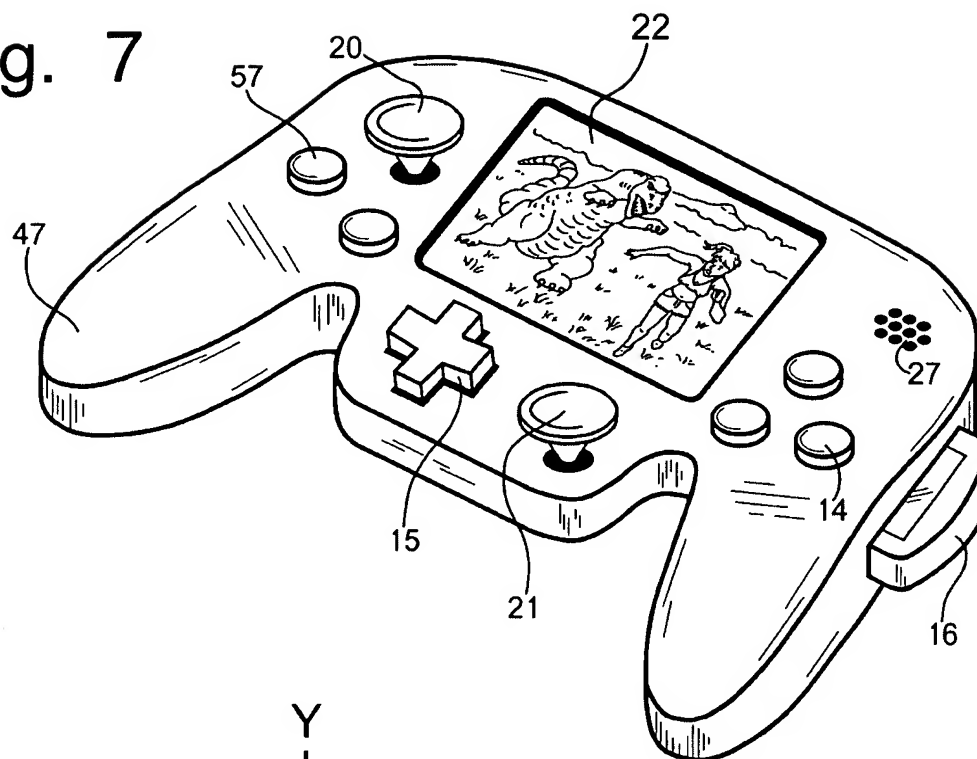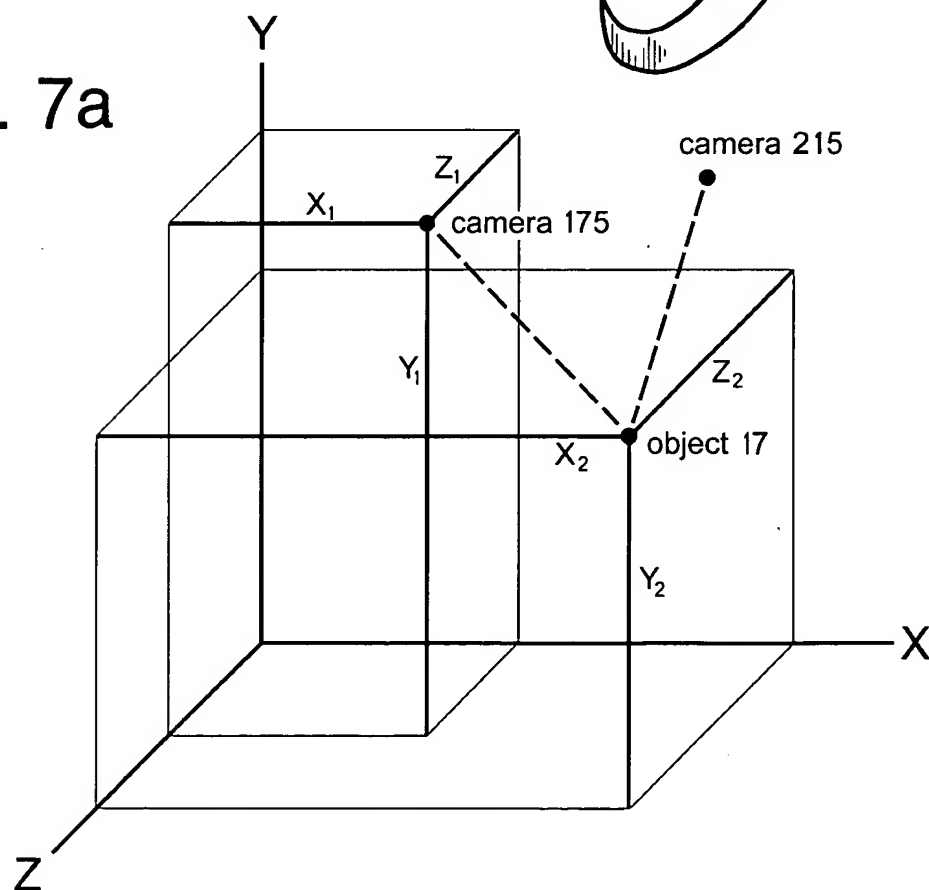RAM in console   90

program for transferring programs from disk to portable game system
program for generating image of 3D world
program for generating image of animated character in 3D world
program for generating image of object in 3D world
program for generating data to be transferred to portable game system
program for processing data received from portable game system
program for determining viewpoint and camera angle
data for simulated 3D world
data for object in simulated 3D world
data for animated character in simulated 3D world
data for animated character performing action in simulated 3D world
data for location of character in 3D world
data for character descriptions (polygons, textures, etc)
data for terrain descriptions (polygons, textures, etc)
data for maps, word menus, etc.

Fig. 9

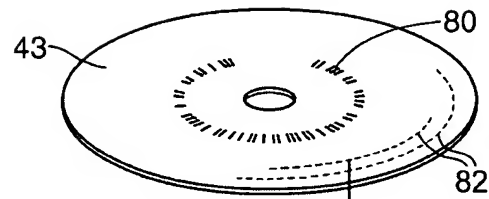| control unit ID number	operation code	picture serial number	size factor	coordinate X_1 number of pixels	coordinate Y_1 number of pixels	coordinate X_2 number of pixels	coordinate Y_2 number of pixels	object id3

78
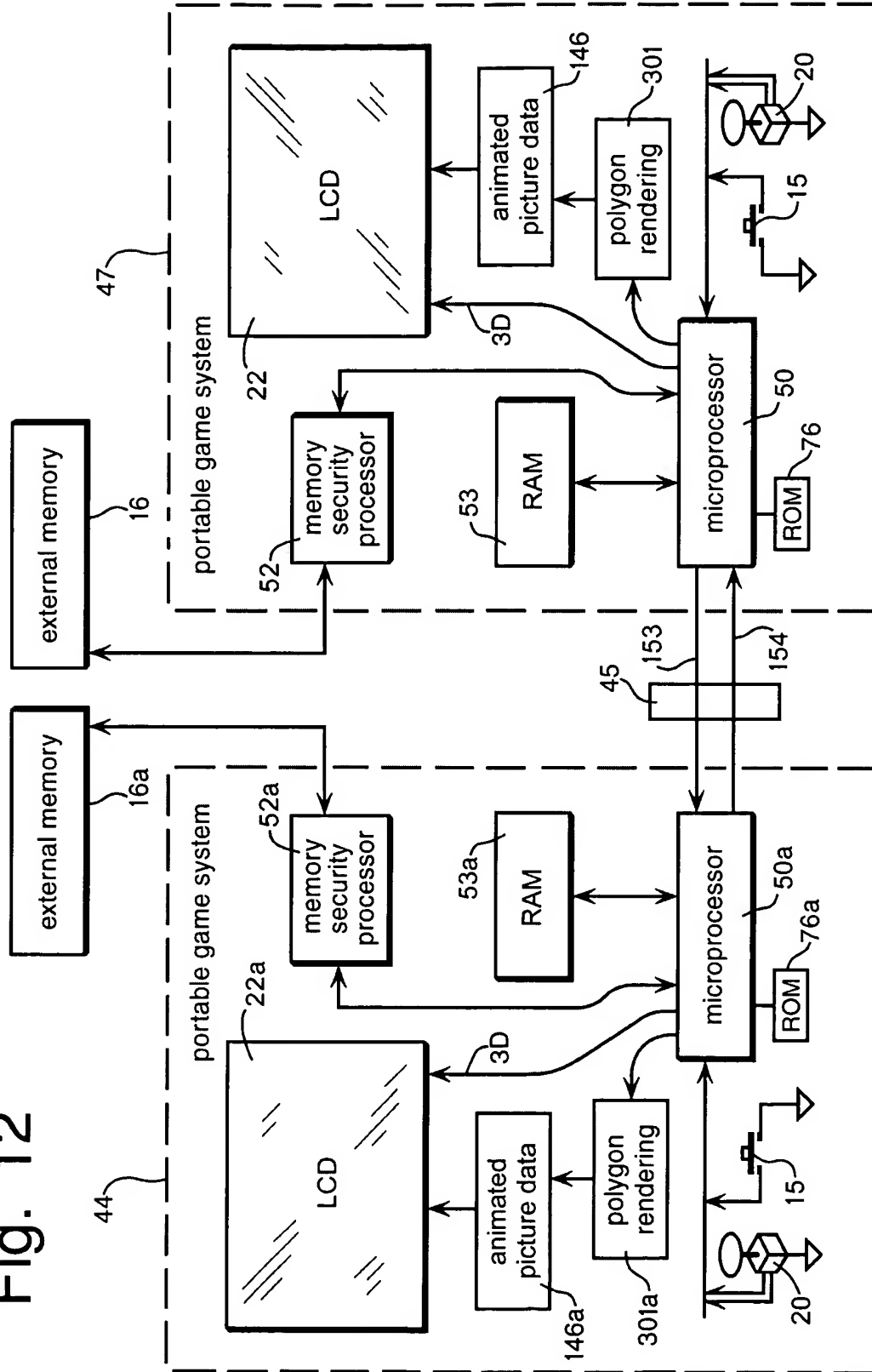
Fig. 10

53

RAM in portable system

program for loading RAM with programs supplied by console and disk
program for processing data records from console
program for sending data records to console
program for converting cursor movement into location coordinates
program for generating image of 3D world
program for determining viewpoint and camera angle
program for generating movement of a 3D character in a 3D game world
program for superimposing a 3D object picture on a 3D background
program for animating a character
program for displaying maps and other non-animated pictures
data for simulated 3D world
data for object in simulated 3D world
data for animated character in simulated 3D world
data for character descriptions (polygons, textures, etc)
data for terrain descriptions (polygons, textures, etc)
data for maps, word menus, etc.

Fig. 11

on data carrier

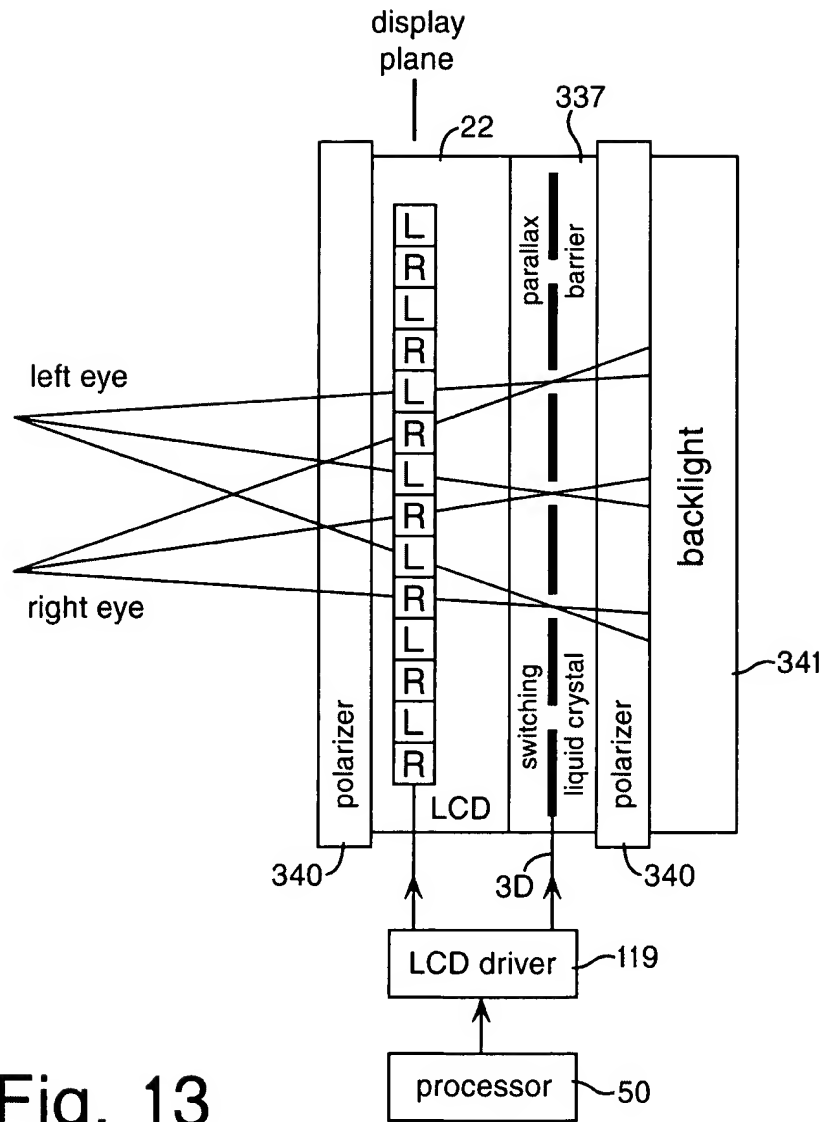| program for loading RAM with programs supplied by disk |
| --- |
| program for generating data representing a simulated 3-D world |
| program for generating picture data of animated character in 3-D world |
| program for generating picture data of objects in 3-D world |
| program for calculating point of view locations and camera angles |
| program for transferring programs to portable game system 47 |
| programs to be transferred to a portable game system |
| program for sending data to portable game system to control LCD display |
| |
| data to be transferred to a portable game system |
| picture data for simulated 3D world |
| picture data for player-controlled object in simulated 3D game world |
| data for animated character performing action in 3D game world |
| data for location of character in 3D game world |
| data for character and object descriptions (polygons, textures, etc) |
| data for terrain descriptions (polygons, textures, etc) |
| data for maps, word menus, etc. |

Fig. 12

display
plane

337

22

left eye

right eye

polarizer

L
R
L
R
L
R
L
R
L
R
L
R
L
R
L
R
L
R

parallax barrier

LCD

switching liquid crystal

polarizer

backlight

340

3D

340

341

LCD driver 119

processor 50

Fig. 13

340   22   340

L

R   Lenticular screen
                           342

341   backlight

L

R   right eye

                                         left eye

L

R

Fig. 14
PRIOR ART

---

polarizer   LCD   polarizer
340   22   340   337
                                 parallax barrier

L

R   343
                                         slits

341   backlight

L   right eye

R   left eye

L

R

Fig. 14a
PRIOR ART

pixel